REMARKS

The Examiner is thanked for the careful review of this application. A Request for Continued Examination (RCE) is being filed under 37 CFR § 1.114 for U.S. Patent Application Number 09/747,660, filed on December 22, 2000. Applicants submit this Preliminary Amendment in response to the Final Office Action, dated June 26, 2003 (the Final Office Action) issued in the Application. Claims 1-5, 8-12, and 15-19 are pending after entry of the present Preliminary Amendment. Claims 6, 7, 13, 14, and 20-30 were previously cancelled. Amendments do not introduce any new matter.

Claim Objections under 37 CFR § 1.75(c):

The Office has noted objections to claims 4, 5, 11, 12, 18, and 19, as failing to further limit the apparatus for being drawn to a future intended use of the apparatus. Accordingly, Applicants have amended the claims to further limit the apparatus so as to comply with the requirements set forth by the Office and to better define what Applicants believe is the invention. Accordingly, Applicants request that the claim objections be withdrawn.

Claim Rejections under 35 U.S.C. § 102(b):

The Office has rejected claims 1-7 under 35 U.S.C. 102(b) as being anticipated by the U.S. Patent No. 4,654,522 to Gornick et al. (hereinafter, "Gornick") and claims 1-5 as being anticipated by the U.S. Patent No. 5,974,681 to Gonzalez-Martin et al. (hereinafter, "Gonzalez"). The Office has also rejected claims 1-5, 8-12, and 15-19 under 35 U.S.C. 102(b) as being anticipated by the U.S. Patent No. 4,788,994 to Shinbara and U.S. Patent No. 6,292,972 to Ishihara et al. (hereinafter, "Ishihara"). These rejections are respectfully traversed, as the cited prior art fails to disclose each and every element of the claimed invention, as defined in amended independent claims 1, 8, and 15.

Gornick teaches a miniature position encoder that transduces angular changes in a shaft position to an electrical output representing the gray code. The encoder has a shaft that causes an attached metallic logic disk to rotate. The logic disk includes a plurality of openings defined therein radially. The openings allow the gray code to be transmitted through the logic disk. The shaft is secured to a drive arm by insert molding and the shaft rotates, so does the logic disk.

In contrast to the Office's assertion, any plate is not potentially a wafer backside plate because the wafer backside plate, as defined in the specification of the subject application, provides specific functions. The logic disk shown in Gornick cannot be a wafer backside plate because the logic disk must include a plurality of radially defined slits so that the gray code can be transmitted through. Instead, one of many goals is that the wafer backside plate of the claimed invention can be is used to prevent introduction of contaminants to the backside of the wafer. As can be appreciated, the plurality of slits in the logic disk shown in Gornick in fact facilitates introduction of contaminants.

Furthermore, the logic disk of Gornick is mounted to the shaft and as such, rotates in place when the shaft rotates. Furthermore, the shaft in Gornick is not disclosed to be moving up and down. Thus, the logic disk of Gornick cannot slide between an up position and a down position due to centrifugal force when the shaft is rotating. Additionally, it is unclear which component the Office asserts to be the wafer in Gornick. In fact, Gornick does not disclose a component that can function as the wafer. Accordingly, Gornick does not disclose that a gap exists between the alleged wafer and the logic disk. Furthermore, Gornick does not disclose that the alleged gap is less when the wafer backside plate is in the up position because the logic disk of Gornick cannot slide up or down. Additionally, Gornick is directed toward an entirely different art, as such, Gornick is not equipped to process a wafer.

Considering next, the second cited art, Gonzalez, a spin dryer assembly is disclosed. The spin dryer shown in Gonzalez includes a platform for holding the wafer and a shaft that is secured to the platform using a screw or any other fastener. The platform holds the wafer securely while the wafer is being rotated. The shaft has a key and moves within a housing. The key formed on the shaft mates with a keyway formed within the platform receptacle. In this manner, the platform and the shaft are fixed for relative motion. To achieve the objective of minimizing the mass of the spin dryer, a plurality of apertures are formed around and through the platform.

Applicants respectfully disagree with the Office's assertion that Gonzalez discloses the limitations of a wafer backside plate or that the platform in Gonzalez automatically slides from an up position to a down position and vice versa due to the centrifugal force. The platform of Gonzalez is not a wafer backside plate because the platform provides the function of holding the wafer using a plurality of support pins. As such, while the wafer is held by the support pins, the centrifugal force cannot force the wafer to slide up or down. Furthermore, if

a gap exists between the wafer and the platform (a proposition with which Applicants disagree), the gap remains constant throughout the spin-dry operation. Thus, Gonzalez fails to teach a gap that is less when the platform is in the up position than when the platform is in the down position.

Additionally, the platform shown in Gonzalez has a plurality of mass-reducing apertures through and around the platform. As such, during the spin-dry operation, the contaminants can penetrate through the apertures and re-contaminate the backside of the wafer. In contrast, reducing recontamination to the backside of the wafer is one of many goals of the subject application, and as such, when the wafer backside plate of the claimed invention is in the up position, the wafer backside plate is configured to reduce recontamination to the backside of the wafer. The platform shown in Gonzalez, however, facilitates re-contamination to the backside of the wafer.

Furthermore, the platform shown in Gonzalez cannot automatically slide from the up position to the down position due to the centrifugal force. Rather, the shaft and the platform are secured using a screw and as such, are fixed for relative motion. As a result, when the shaft and the platform stop rotating, the platform cannot automatically slide from the up position to the down position because the platform is fastened securely to the shaft. In the claimed invention, however, the backside plate slides independent of the non-rotational movement of the shaft. That is, for example, the backside plate of the claimed invention can slide up even if the shaft is not moving upwardly (e.g., when the shaft rotates in place). This functionality is disclosed by the various embodiments of the invention, as presented in the as-filed application. Accordingly, no new matter is introduced by this clarification.

Proceeding to the next cited art, Shinbara, a wafer holding mechanism is disclosed. Shinbara uses a rotary shaft 6 one end of which is pushed into a housing. The rotary shaft 6 is secured to a rotary head that is in turn bolted to the thrust end of the rotary shaft 6. The rotary shaft 6 receives a movable driving shaft 5, which is rotatable relative to the rotary shaft 6. The rotary shaft is supported by a base that is movable up and down. Up and down movements of the rotary shaft causes the driving shaft to rotate causing the movable chuck holders to engage or disengage the wafer.

Applicants respectfully disagree with the Office's contention that Shinbara discloses each and every feature of the claimed invention. Contrary to the Office's assertion, the rotary

head shown in Shinbara is not a wafer backside plate and does not function as a wafer backside plate. Rather, the rotary plate is secured to a head that is bolted to the thrust end of the rotary shaft 6. As a consequence, the rotary plate is not being engaged by the rotary shaft or the driving shaft. Furthermore, the rotary plate shown in Shinbara does not slide automatically between the up position and the down position due to the centrifugal force. Instead, in Shinbara, both the rotary plate and the rotary shaft 6 move up and down together. This is contrary to the claimed invention wherein the backside plate slides independent of non-rotational movement of the shaft.

Additionally, the gap existing between the rotary head and the wafer remains constant whether the rotary plate and the rotary shaft are in the up position or in the down position. As such, the rotary plate shown in Shinbara cannot perform the function of reducing recontamination to the backside of the wafer, as the gap exists consistently between the wafer and the rotary plate while the wafer is being processed.

The final reference, Ishihara, also fails to teach each and every feature of the claimed invention, as defined in claims 1, 8, and 15. Ishihara teaches a scrub washing apparatus that uses a spin chuck having a mounting table and a plurality of mechanical chucks for holding the wafer. Among several features missing in Ishihara, the mounting table of Ishihara is not disclosed or shown to include an aperture or a cylindrical edge lip. Furthermore, contrary to the Office's assertion, such feature having an aperture is not inherent as a second component is defined between the shaft and the mounting table. As to Office's contention that the use of a vacuum absorption mechanism disclosed in Ishihara renders the inclusion of the aperture inherent, Applicants respectfully submit that the use of the vacuum causes the wafer to be sucked by the vacuum mechanism and be stuck to the mounting table. As such, in contrast to the claimed invention, a gap cannot exist between the wafer and the mounting table as a result of the suction. Furthermore, the size of the gap cannot vary depending on the up or down position of the wafer backside plate.

Additionally, the mounting table of Ishihara is not disclosed or shown to automatically slide between and up position and a down position due to the centrifugal force. Ishihara further fails to teach that the backside plate slides independent of non-rotational movement of the shaft.

Thus, amended independent claims 1, 8, and 12 are respectfully submitted to be patentable under 35 U.S.C. § 102(b) over the cited prior art. In a like manner, dependent claims 2-5, 9-12, and 16-19, each of which directly or indirectly depends from the respective independent claim 1, 8, and 12 are submitted to be patentable 35 U.S.C. § 102(b) over the cited prior art for at least the reasons set forth above regarding independent claim 1, 8, and 15, respectively. As such, the Applicants respectfully request that the § 102(b) rejections be withdrawn.

In view of the foregoing, the Applicants respectfully submit that all of the pending claims are in condition for allowance. Accordingly, a Notice of Allowance is respectfully requested. If the Examiner has any questions concerning the present Amendment, the Examiner is kindly requested to contact the undersigned at (408) 749-6900, ext. 6913. If any additional fees are due in connection with filing this Amendment, the Commissioner is also authorized to charge Deposit Account No. 50-0805 (Order No. LAM2P216). A duplicate copy of the transmittal is enclosed for this purpose.

Respectfully submitted,
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